VERMONT FREIGHT PLAN & RAIL PLAN UPDATES

NEWSLETTER ISSUE 1 | SPRING 2020

A First Look at the Plans

The Vermont Agency of Transportation (AOT, also known as VTrans) is embarking on an update of two important statewide modal plans: the Vermont Freight Plan (2012) and the Vermont Rail Plan (2015). The updates will be closely coordinated to efficiently incorporate the overlap of freight rail components.

Keeping these plans current is necessary to meet federal requirements related to Federal Highway Administration (FHWA) Freight Formula funds, and to remain eligible for certain types of Federal Railroad Administration (FRA) grant programs.

There have been a series of minor updates in the Freight Plan since 2012 to ensure consistency with MAP-21 and FAST Act requirements. VTrans envisions a major rewrite of the Freight Plan for this update cycle.

The Rail Plan update will refresh the data, maps, and the proposed projects table. Significant changes to the general direction and goals are not anticipated.

The Freight Plan update will be comprehensive and multi-modal, including air, rail, roadways, and waterways. It will be guided by a diverse Stakeholder Committee to be formed as part of this project.

Vermont Freight Plan Update

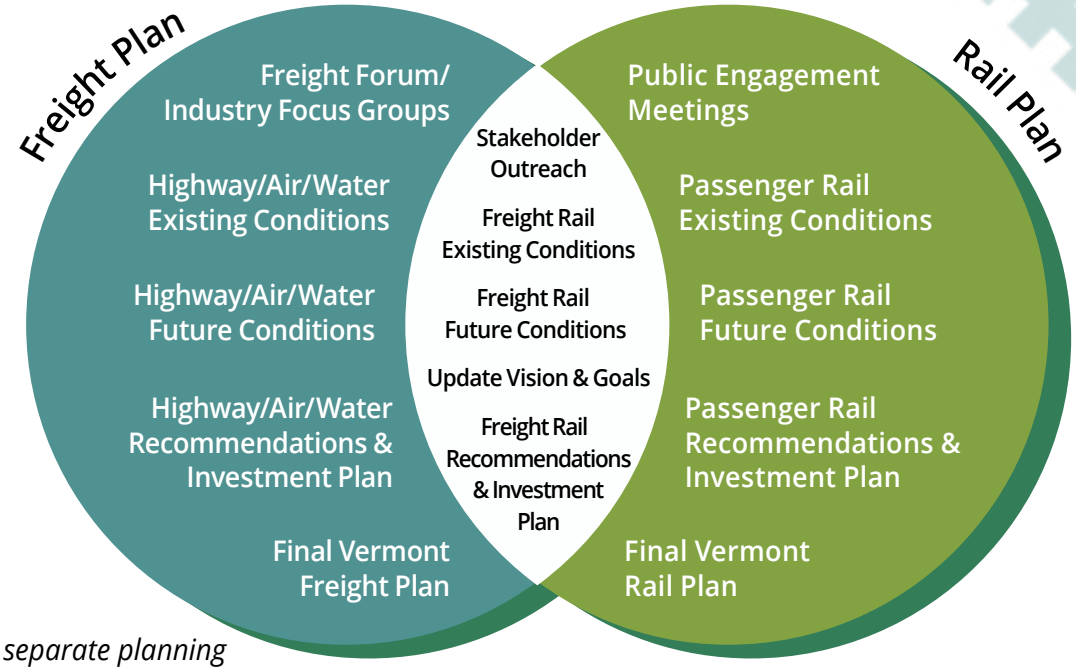
Vermont recognizes the importance of freight transportation for long-term economic development and vitality. The Vermont Long-Range Transportation Plan supports strategic investments in all freight infrastructure, including highways and bridges, railroads, and airports.

The State has worked diligently to maintain rail infrastructure and improve capacity with the goal of increasing the volume of freight moved via rail. Projections of freight traffic increases in the coming decades underscore the importance of maximizing the use of rail freight for roadway safety and to maintain highway and bridge infrastructure. Vermont has also made strategic investments in State-owned airports to support freight movement.

(continued)

Both plan updates will address developing issues, including changes to the global economy and evolving trade agreements, e-commerce, technological advancements, and the reliability and resilience of our transportation system.

VERMONT AGENCY OF TRANSPORTATION



Although two separate planning efforts, the Freight and Rail Plans share common tasks and work products.

Vermont Rail Plan Update

The State of Vermont owns 305 of the approximately 578 miles of active rail line. Passenger service is provided by Amtrak, consisting of the Ethan Allen Express terminating in Rutland (being extended to Burlington) and the Vermonter terminating in St. Albans. Freight services covering most of the rail network is provided by Genesee & Wyoming, Inc. and Vermont Rail System (VRS).

Vermont's Comprehensive Energy Plan sets forth goals for reducing greenhouse gas emissions over the coming decades. Transportation strategies to achieve these goals include increasing intercity passenger ridership as well as moving more freight by rail rather than highways.

The Vermont Rail Advisory Council (VRAC) will serve as the primary sounding board for the Rail Plan. There will be a formal public outreach process including public meetings.

Process for Plan Updates

The Rail and Aviation Bureau is the primary implementation entity of the Rail Plan and an essential partner on the Freight Plan. Policy and Planning Section staff will provide support for the update of the plans. Each project will be managed by a Planning Coordinator serving as a Project Manager; one for the Rail Plan and one for the Freight Plan. These coordinators will inform and engage AOT staff.

Partner-agencies include FHWA, FRA, the Chittenden County Regional Planning Commission (CCPRC), and the State's rural Regional Planning Commissions (RPCs). CCRPC is Vermont's only Metropolitan Planning Organization (MPO) and is responsible for conducting transportation planning for the metropolitan area.

Resources

Vermont Rail Plan

Vermont Freight Plan

Questions?

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INFASTRUCTURE SITE EVALUATION REPORT

WACR M&B Freight Corridor Commuter Rail Study

Montpelier, VT to Barre, VT (MP 0.0 to MP 7.75)

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Executive Summary

The Vermont General Assembly has requested that the Vermont Agency of Transportation develop and deliver a written report on the state-owned railroad line between Montpelier, VT and Barre, VT focused on the cost to upgrade the existing freight track corridor to commuter rail standards and provide an estimated construction schedule to complete the required upgrades.

This Corridor Study has identified proposed infrastructure improvements to the track, grade crossings, and bridges along the 8-mile section of track on a portion of the New England Central Railroad (NECR) and the Washington County Railroad (WACR) Montpelier and Barre (M&B) Division between Montpelier Junction in Montpelier, VT and the TD Bank Drive Thru located on Metro Way in Barre, City VT (WACR MP 7.75). There are currently 32 grade crossings, 7 bridges, and approximately 20 culverts within the study area. The existing track consists of timber cross ties, a variety of rail sizes (maximum of 115-pound RE), and stone ballast.

The infrastructure improvements proposed would upgrade all 8 miles of track to 115-pound RE rail with new timber cross ties, new ballast, and new subbase suitable for drainage. Of the seven bridges within the study area, two would need to be replaced, two would require rehabilitation, two existing bridges do not require rehabilitation, and the condition of one

bridge (NECR's Bridge over the Dog River) is unknown. The infrastructure improvements would also include replacement of all drainage structures, installation of three high-level platforms, and installation of signal control at the grade crossings.

Additionally, the study has evaluated the future installation of positive train control (PTC) and replacement of rail materials for a siding track. While the Federal Railroad Administration (FRA) has issued a federally mandated requirement (CFR Title 49 Subtitle B Chapter 2 Part 236) requiring railroads operating passenger service to install PTC, there is language prior to this section in the regulations (CFR Title 49 Subtitle B Chapter 2 Part 235.8) that discusses "Relief from the requirements of part 236 of this title." Thus, allowing the potential for the passenger service to be run without PTC.

The estimated cost for these infrastructure improvements is approximately **$67 million** without PTC and approximately **$96.4 million** with PTC and an assumed design and construction schedule of approximately **5 years**.

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Project Overview

The Vermont Agency of Transportation is investigating the cost and schedule associated with upgrading the Washington County Railroad Montpelier and Barre Division track between Montpelier, VT and Barre, VT up to passenger rail standards.

The existing 8-mile section of track is currently owned by the Vermont Agency of Transportation (VTrans) and leased to Vermont Railways (VRS), a shortline railroad operating in Vermont and northern New York. The operator for this section of track is the Washington County Railroad (WACR), Montpelier and Barre (M&B) Division. Currently, this section of track is primarily used for transporting granite stones from the Barre Quarry to Montpelier Junction where the line terminates at the rail line operated by New England Central Railroad (NECR) currently owned by Genesee & Wyoming Railroad (G&W).

A site evaluation has been performed on the 8-mile section of track to determine the infrastructure improvements required to upgrade the existing freight track corridor to passenger rail standards.

1.1 Scope of Work

In accordance with the Vermont General Assembly Bill H.529 (Act 59) Section 20a, VTrans has selected VHB to develop a report that reviews all the major elements associated with upgrading the existing freight rail corridor from its existing condition to passenger rail

standards. This report identifies the major elements of construction as well as order-of-magnitude cost and schedule for implementation. This report does not identify additional infrastructure upgrades associated with operational or safety improvements for commuter rail service on the WACR M&B line, including but not limited to locating and constructing additional sidings and the closing or consolidation of existing at-grade crossings.

The project limits for this evaluation are the northern leg of the wye at Montpelier Junction to the TD Bank Drive Thru located on Metro Way in the City of Barre (WACR MP 7.75) as shown in Figure 1 on the following page. The northern leg of the wye is operated by NECR. The Montpelier/Barre Amtrak Station is on the NECR tracks west of the north leg of the wye. VHB was tasked with performing a visual track inspection to review the existing conditions and assess the potential infrastructure improvements and develop a cost estimate to upgrade the corridor to provide passenger service. Existing track curvature, Right-Of-Way (ROW), clearances, utilities, drainage, environmental permitting needs, signals and communications requirements, platform locations, and other elements associated with new passenger rail service are discussed throughout the report, and outline the major elements of design that have been incorporated in to the cost estimate and construction staging assumptions.

Montpelier/Barre Amtrak Station (NECR Mainline MP 76.4)

TD Bank Drive-Thru (WACR M&B MP 7.75)

1.2 Railroad Operations

At the Montpelier/Barre Amtrak Station (NECR MP 76.4) the corridor being analyzed for service is currently owned by G&W and operated by NECR. NECR also operates and maintains the main line service, which hosts the platform stop for the Montpelier/Barre Amtrak Station. The ownership/operating rights for G&W/NECR extend from the Amtrak station to the southeast through the wye track up to Junction Road (WACR MP 0.0). The track is owned by VTrans and operated and maintained by the WACR M&B from Junction Road (WACR MP 0.0) to the TD Bank Drive-Thru (WACR MP 7.75).

Currently WACRM&B operates freight service to and from the granite quarry in Barre, VT. Daily operations consist of one trip with empty freight rail cars from Montpelier Junction to the Quarry (through Barre City) in the morning and then one trip from the Quarry back to Montpelier Junction and the NECR yard south of the Montpelier/Barre Amtrak Station in the

evening with full rail cars. The locomotives are only able to bring seven cars over the hill to the Quarry at a time, so freight cars are stored near the engine house in the WACR M&B yard just south of VT Route 62. Each trip to and from the NECR yard consists of 20-30 freight cars. Future expansion of quarry operations may increase the number of freight cars per train to 60.

1.3 Evaluation Assumptions

The evaluation was limited to visual methods in accessible areas along the study corridor. Generally, the elements reviewed were accessible on foot and did not require more than a safety-approved ladder to reach. Restoration of the WACR Line to a specific Federal Railroad Administration's (FRA) classification was not determined. To properly evaluate FRA classifications, a more detailed analysis would have been required to be performed on the roadbed, track geometry, track structure, and other track-related infrastructure. A general assumption was made that based on the current condition of the track throughout the corridor, all track materials will have to be upgraded to provide track infrastructure that meets the standards of passenger rail, except for the recently reconstructed grade crossings. American Railway Engineering and Maintenance-of-Way Association (AREMA), FRA, and railroad industry standards have been utilized to determine the most suitable condition for the Montpelier to Barre Commuter Service.

In order to help VTrans identify potential future considerations and restrictions, some baseline assumptions about the future service and infrastructure have been made.

- The corridor will remain primarily single track and one train set will operate to and from Montpelier,
- The existing geometry will be maintained, and maximum allowable speed (MAS) assumptions have been identified (refer to Chapter 3 for MAS analysis),

This evaluation takes in to consideration the following items:

- Track infrastructure (demo, earthwork, trackwork)
- Platform locations (platform surface only)
- Grade crossings (track infrastructure, signals, roadway)
- Signals and communications (corridor signals, PTC)

This evaluation has excluded costs or assumptions related to the following items:

- Environmental permitting analysis
- Property acquisitions or easements
- Utility coordination
- Topographic survey
- Station facilities (parking, lighting, site/civil, etc.)

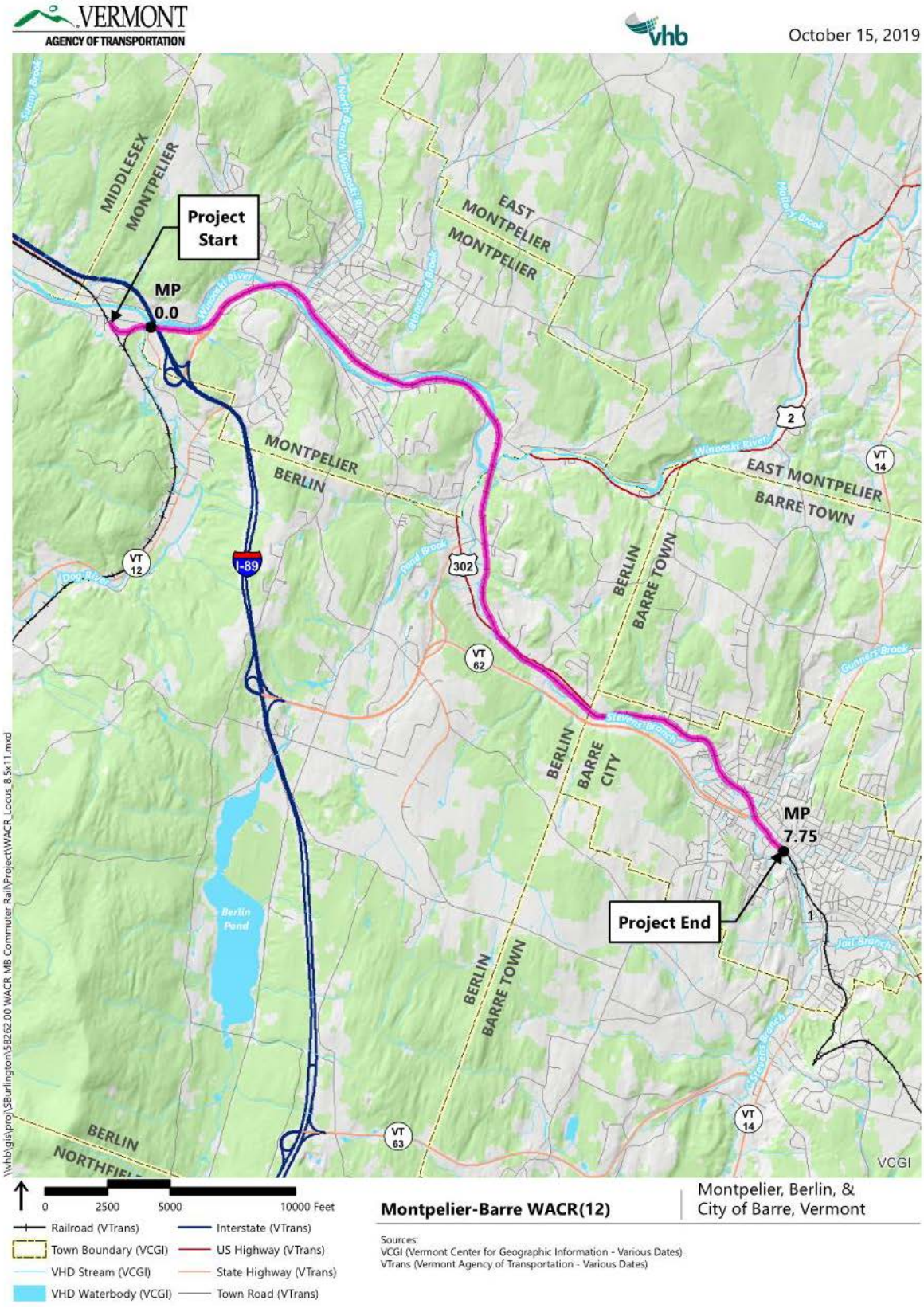

Figure 1 Study Corridor Locus Map

2

Evaluation and Assessment of Findings

A site visit was performed the week of September 16, 2019 and the findings have been outlined in the following chapter. All existing infrastructure elements were inspected visually and photo documentation of existing tracks, grade crossings, and other major infrastructure elements are provided in Appendices A and B – Photo Logs. The following sections outline the individual items that were inspected in the field and a summary of the findings.

2.1 Track

Throughout the 8-mile stretch of track from Montpelier to Barre, VT the condition of the rail varies from new 115-pound rail to 100-year old 80-pound rail. This dichotomy can be seen throughout the corridor in the condition of the ties, grade crossings, ballast, rail, and all other track structure elements. There are areas that have been recently replaced through track re-construction contracts, and emergency repairs to maintain the baseline condition required to operate the daily granite freight trains.

North of Bailey Avenue (Approx. MP 0.75)

South of Pioneer Street (Approx. MP 2.50)

North of Partridge Farm Road (Approx. MP 4.00)

North of Jones Brothers Way (Approx. MP 6.40)

Several turnouts were identified on the visual track inspection:

- The yard track in NECR territory includes two No. 8 turnouts
- One No. 8 turnout for a siding track at Granite Street in Montpelier,
- One No. 8 turnout for a siding track adjacent to Montpelier Road crossing (WACR MP 3.23),
- Four No. 8 turnouts for a siding track, engine house connection, and dead-ended storage track are in Barre at the end of the study corridor.

All sidings and turnout locations are to be maintained for future operations.

2.2 At-Grade Crossings

The study area consists of 32 at-grade crossings on the WACR line as shown in Table 1 below. Each grade crossing is identified by the milepost, the street name, the crossing number, and the crossing condition Photos of each crossing can be found in Appendix B.

Table 1 Existing Grade Crossing Inventory

Milepost	Street Name	Crossing Number	Condition
0.00	Junction Road	837-319V	2 - Fair
0.70	Green Mountain Drive	837-320P	2 - Fair
0.89	Bailey Avenue	837-321W	2 - Fair
1.00	Bike Path Crossing	969-326V	3 – Good
1.05	State Complex Pedestrian	696-328J	1 – Poor
1.10	Pedestrian	NOT-0008	4 – Excellent
1.17	Taylor Street	837-322D	4 – Excellent
1.27	Bike Path	NOT-0010	4 – Excellent
1.36	Main Street	837-323K	2 – Fair
1.47	Pedestrian	969-327C	2 – Fair
1.91	Granite Street (Montpelier)	837-326F	2 – Fair
2.10	Gin Lane	900-599V	4 – Excellent
2.49	Pioneer Street	837-327M	2 – Fair
2.70	Lumber Yard	No Number	2 – Fair
3.08	Vacant Lot	837-329B	3 – Good
3.23	Montpelier Road (Route 2)	837-330V	2 – Fair
3.23b	Country Club Road	837-331C	2 – Fair
4.14	Partridge Farm Road	837-333R	3 – Good
4.84	US-302	837-334X	3 – Good
5.56	Roland Trailer Park	837-336L	1 - Poor
6.45	Jones Brother Company	837-337T	2 – Fair
6.53	Jones Brothers Way	837-338A	2 – Fair
6.77	Wiley Street	837-339G	3 – Good
6.80	Gulf Oil Company	837-340B	2 – Fair
6.99	West Second Street	837-341H	2 – Fair
7.06	Berlin Street	837-342P	1 – Poor
7.11	Hill Martin Corp	837-343W	1 – Poor
7.21	Blackwell Street	837-344D	2 – Fair
7.42	Vermont Route 62	837-345K	4 – Excellent
7.64	Granite Street (Barre)	837-348F	2 – Fair
7.72	Depot Square	837-349M	2 – Fair
7.75	TD Bank Drive-Thru	NOT-0005	3 – Good

Source: FRA Grade Crossing Inventory; VTrans Rail Apps

The condition of these crossings has been defined by the VTrans Rail Apps website and grade crossing inventory reports included in Appendix C. Consistent with the existing track structure, the grade crossings condition varies from new crossing with new warning signs, flasher, roadway gates, and signal control houses to dirt paths with FRA crossing numbers, but no discernable crossing surface or automatic highway crossing warning equipment.

In addition to the crossings listed above there are two additional crossings adjacent to the Montpelier/Barre Amtrak Station, within the NECR yard limits. One crossing is used for access to the propane facility owned by DCP Midstream and another private crossing at the start of the wye track. Both crossings are in fair condition and in need of replacement.

Green Mountain Drive Crossing (MP 0.70)

Taylor Street Crossing (MP 1.17)

Partridge Farm Road (MP 4.14)

West 2nd Street Crossing (MP 6.99)

2.3 Bridges

The bridge condition ratings are based on a VTrans Rail Bridge Management Program Manual standard numbering system. Table 2 below has identified the general condition rating system for reference.

Table 2 Bridge Condition Rating System

Condition Rating	Description
H	Hidden from View
N	Not Applicable
9	Excellent Condition
8	Very Good Condition – no problems noted.

7	Good Condition – some minor problems.
6	Satisfactory Condition – structural elements show some minor deterioration
5	Fair Condition – primary elements are sound but may have minor section loss, cracking, spalling or scour
4	Poor Condition – advanced section loss, deterioration, spalling or scour
3	Serious Condition – loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present
2	Critical Condition – advanced deterioration or primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored, it may be necessary to close the bridge until corrective action is taken.
1	Failure Imminent – major deterioration or section loss present in the critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic, but corrective action may allow light service.
0	Structural Failure – out of service; beyond corrective action.

Source: VTrans Rail Bridge Management Program Manual

The study area also includes seven railroad bridges, five over the Winooski River, one over a small feeder stream to the Winooski River, and one over the Dog River before its confluence with the Winooski River as listed in Table 3 below. The condition rating of the bridges overall is provided based on recent inspection reports (developed by others).

Table 3 Existing Bridge Inventory and Condition Ratings

Milepost	Bridge Location	Bridge Number	Bridge Type	Condition Rating
Unknown	NECR over the Dog River	Unknown	Thru Plate Girder	Unknown
1.04	Winooski River Bridge #1	Br. 303	Thru Truss	5
1.28	Winooski River Bridge #2 (North Branch)	Br. 304	Thru Truss	3
2.31	Winooski River Bridge #3	Br. 305	Thru Plate Girder	2
3.15	Winooski River Bridge #4	Br. 306	Thru Truss	3
3.50	Winooski River Bridge #5	Br. 307	Thru Truss	5
7.29	Gunners Brook Bridge #1 (Stevens Branch Feeder)	Br. 309	Beam Span	7

Source: VTrans Rail Apps; Vermont State Bridge Inventory

2.3.1 General Condition Assessment

The following is a general condition assessment of each bridge based on review of inspections reports (developed by others) and our site visit on September 16, 2019.

- **NECR Bridge over the Dog River** conditional rating is unknown. Information on the bridge was requested from NECR but was not received. Based on a review of the existing bridge condition during the site visit, the bridge appears to be in fair condition. There is corrosion with section loss noted in the top surface of the stringer top flanges, top surface of girder bottom flanges, bottom of girder stiffeners, and at the floor beam to girder connections. A thorough review of the NECR bridge inspection report is necessary for a detailed assessment of the existing bridge condition.

NECR Bridge over the Dog River – Bridge from East Approach

NECR Bridge of the Dog River – Corrosion with Section Loss to Floor Beam to Girder Connection and Girder Bottom Flange

- **WACR Bridge 303** has an overall condition rating of 5 with deck, superstructure, and substructure condition ratings of 5, 5, and 6 respectively. Significant condition defects include distortion to the end diagonals and loss of restraint of expansion bearing rollers.

WACR Bridge 303 – East Approach

WACR Bridge 303 Expansion Bearing with Dislodged Roller

- **WACR Bridge 304** has an overall condition rating of 3 with deck, superstructure, and substructure condition ratings of 4, 3, and 6 respectively. Significant deteriorations include heavy delamination's in the web above the bottom flange angles and local perforations in the web at the top flanges of the stringer connections. There is also heavy delamination and section loss of select stringer webs above the bottom flange.

WACR Bridge 304 – North Truss

WACR Bridge 304 – Typical Section Loss to Stringer at Bottom of Web

- **WACR Bridge 305** has an overall condition rating of 2 with deck, superstructure, and substructure condition ratings of 5, 3, and 5 respectively. There are significant deteriorations to the girder webs at the floor beam connections and to the floor beams, primarily in the web above the bottom flange angles.

WACR Bridge 305 – Girder and Floor Beam Perforations at Floor Beam to Girder Connection

WACR Bridge 305 – Typical Section Loss to Stringer at Bottom of Web

- **WACR Bridge 306** has an overall condition rating of 3 with deck, superstructure, and substructure condition ratings of 4, 3, and 6 respectively. The end floor beams are in serious condition with several locations of 100% section loss to the bottom flange horizontal angles. Stringers are also in serious condition with several locations of web perforations of significant size. Expansion bearings do not appear to be functioning with the roller nests partially ejected with vegetation growth between the rollers.

WACR Bridge 306 – 100% Section Loss to End Floor Beam Bottom Flange Horizontal Angle

WACR Bridge 306 – Expansion Bearing with Partially Ejected Roller Nest

- **WACR Bridge 307** has an overall condition rating of 6 with deck, superstructure, and substructure condition ratings of 4, 6, and 6 respectively. Truss members, floor beams, and stringers are all in satisfactory condition with minor section losses bottom chord members and bottom flanges of floor beams.

WACR Bridge 307 – Bridge from East Approach

WACR Bridge 307 – Minor Section Loss to Truss Bottom Chord

- **WACR Bridge 309** has an overall condition rating of 7 with deck, superstructure, and substructure condition ratings of 7, 8, and 7 respectively. There is debris build-up on the girder bottom flanges, but they have no significant deteriorations.

WACR Bridge 309 – Bridge from West Approach

WACR Bridge 309 – East Pile Cap Elevation

2.3.2 Summary of Load Ratings

Existing load ratings of the six bridges within the study area have been reviewed with respect to the bridge capacities for the GP40 locomotive. GP40 is the locomotive used by the VTrans Rail Section when calculating load ratings for railroad bridges and was determined to be appropriate for use in this study. Below is a summary of the permissible track speeds for the GP40 locomotive under the Normal Rating Level. Per AREMA, Normal Rating is the load level which can be carried by the existing structure for its expected service life. The rating is dependent on a specified speed, as impact reductions are allowed. Percentages of the locomotive weight are provided for bridges without adequate capacity at a track speed of 10mph.

Table 4 Summary of Load Ratings

Milepost	Bridge Location	Bridge Number	GP40 Locomotive Permissible Track Speed
Unknown	NECR over the Dog River	Unknown	**Unknown**
1.04	Winooski River Bridge #1	Br. 303	**60 mph**
1.28	Winooski River Bridge #2 (North Branch)	Br. 304	**40 mph**
2.31	Winooski River Bridge #3	Br. 305	**51% at 10 mph**
3.15	Winooski River Bridge #4	Br. 306	**76% at 10 mph**
3.50	Winooski River Bridge #5	Br. 307	**Unrestricted (>60mph)**
7.29	Gunners Brook Bridge #1 (Stevens Branch Feeder)	Br. 309	**Unrestricted (>60mph)**

Source: VTrans Undergrade Bridge Inspection and Condition Evaluation Reports

As indicated in the above table, all bridges in the study area, except for Bridges 305 and 306, have adequate capacity for permissible track speed above 40 mph. Bridges 305 and 306 have capacities of 51% and 76% of the GP40 Locomotive Weight at 10 mph respectively.

For Bridge 305, the permissible locomotive speed is limited below 10 mph due to deteriorations to floor beams 7, 11, and 18-22. The remaining elements (girders, stringers,

and other floor beams) have adequate capacity for a permissible locomotive speed of 10 mph.

For Bridge 306, the permissible locomotive speed is limited below 10 mph due to deteriorations to Stringer 502503. The remaining elements (trusses, floor beams, and other stringers) have adequate capacity for a permissible locomotive speed of 20 mph.

The permissible locomotive speed for the NECR Bridge over the Dog River is not known as the request for information from NECR has not been received. The load rating for this bridge will need to be reviewed to determine its load carrying capacity and permissible locomotive speed.

2.4 Signals and Communications

Although there is no train traffic control signal system throughout the corridor currently, a handful of locations at grade crossings and bridges have been upgraded in recent years to include train detection circuits with approaches, insulated joints and island circuits around the crossings. The grade crossings listed in Table 3 below identify the crossings that have signal control.

Table 5 Existing Signal Controlled Crossings

Milepost	Street Name	Flashers	Gates
3.08	Vacant Lot	X	
3.23	Montpelier Road (Route 2)	X	X
4.84	US-302	X	
7.42	VT-62	X	X

Source: FRA Grade Crossing Inventory; VTrans Rail Apps

The crossings listed above have all recently been replaced, which triggered FRA regulations requiring a Diagnostic Team Review (DTR) meeting and additional crossing protection at those crossings based on the DTR meetings. All the other at-grade crossings have no active warning system.

2.5 Drainage

The existing track corridor follows the Winooski River for most of the study corridor. Most of the track is on an embankment that promotes the flow of rainfall runoff from the track structure toward the river or adjacent wetlands. In areas where the track roadbed is either in a cut section or relatively flat, ditches direct runoff along the track to existing cross culverts. As with much of the track structure throughout the study area, the drainage ditches and culverts are all generally in poor condition.

Runoff from adjacent roadways appears to flow to the railroad corridor at multiple locations that are afflicted with poor drainage infrastructure. The existing ditches are filled with silt preventing runoff from flowing properly, and inevitably clogging the culverts under the tracks magnifying the adverse impact.

The exact number of culverts along the study corridor is unknown. However, through visual inspection, a minimum of 20 culverts were identified, not including those installed at grade crossing locations, along the corridor. All but a few culverts identified in the visual inspection are silted, damaged, undersized or have failed requiring replacement.

Existing Drainage Ditch (Approx. MP 2.50)

Existing Drainage Ditch (Approx. MP 6.70)

2.6 Utilities

No subsurface investigations were performed as part of this study. Drainage structures or signal control at grade crossings aside, there were limited utilities identified along the corridor during the visual track inspection. Green Mountain Power owns and maintains all electric utility poles along the corridor. These poles were found at multiple locations, sometimes following the track and other times following the adjacent roadway.

A sewer main was identified along the section of track between Main Street and Granite Street in Montpelier, VT. The exact depth and alignment of the sewer main is unknown.

A water utility structure along the roadway, likely an oil/debris separator, is located in between the tracks and the roadway.

Existing Water Oil/Debris Trap (Approx. MP 6.50)

Existing Sewer Main (Approx. MP 1.75)

Existing Utility Poles 1 (Approx. MP 0.50)

Existing Utility Poles 2 (Approx. MP 3.00)

3

Proposed Design Considerations

A formal design has not been developed for the WACR M&B line Commuter Rail Study, however this report outlines several design considerations that have been assumed throughout the assessment of the existing track corridor. The following sections outline the major infrastructure items included in the cost estimate.

3.1 Track Corridor

All applicable and current AREMA and FRA guidelines and regulations are assumed as the basis behind the initial assessment of the track corridor. As stated in the existing conditions evaluation chapter, the current state of the track infrastructure along the study corridor must be reconstructed to upgrade the corridor to passenger rail standards.

3.1.1 Track Construction

The proposed track structure will consist of the following:

- Running rail: 115-pound RE Continuously Welded Rail (CWR)
- Timber cross ties: Standard 7-inch x 9-inch x 8.5 feet

- Resilient tie plates
- Resilient fasteners (e-clips)
- Screw spikes
- 12" layer of ballast stone
- 8" Layer of sub-ballast
- Compacted subgrade
- Underdrains or ditches

New track construction is assumed for all eight miles of the corridor. The existing rail varies from 80-pound to 115-pound and we have assumed, based on our field observations, that all track materials, excluding a few new grade crossings, will be replaced (see 3.2 At-Grade Crossings below).

The typical section shown in Figure 2 below approximates the proposed single-track section. Although the corridor varies between embankment, cut section, or level ground, this typical section is applicable throughout the corridor. The cost estimate assumes full depth construction for the full length of the corridor. Approximately 27" of ballast and subballast (including all the track materials) will need to be excavated to construct the proposed track bed below the ties (compacted subgrade, subballast, and ballast).

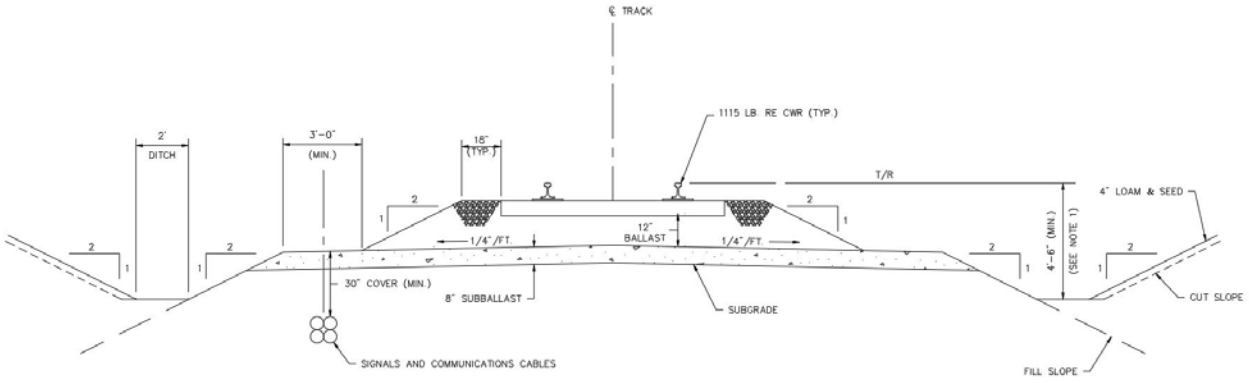

Figure 2 Typical Single-Track Section on Tangent

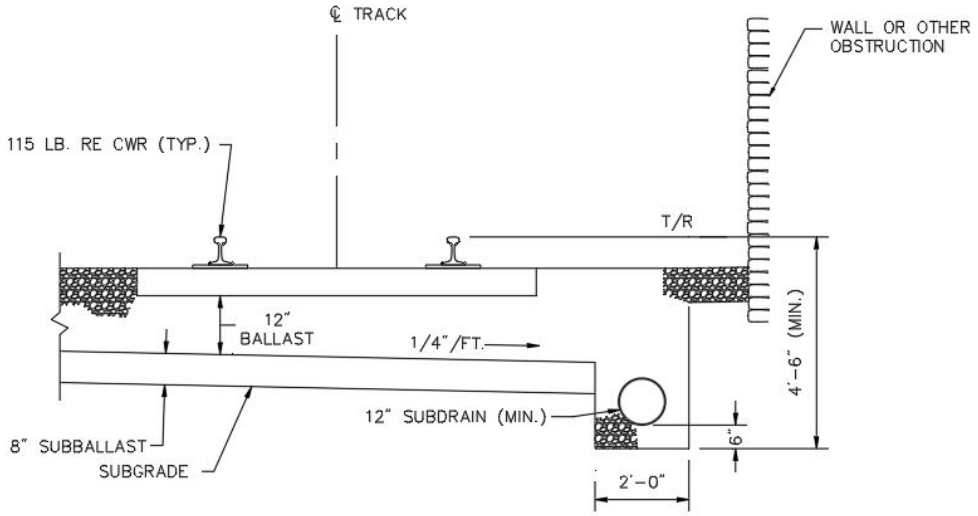

Figure 3 Typical Single-Track Section with Underdrain

3.1.2 Special Trackwork

Nine turnouts were identified during the site visit. All special trackwork will be replaced with new 115-pound No. 8 turnouts. The location of the turnouts at the engine house and the turnouts at the wye may have to be shifted to meet industry standards.

Existing Turnout at Granite Street (Montpelier)

Existing Turnout at Montpelier Road (Route 2)

In addition to the turnouts already identified in this evaluation assessment there are a minimum of two additional turnout locations assumed for this corridor. From Granite Street (MP 1.91) to Montpelier Road (MP 3.23) a new mainline track is being constructed under a separate VTrans project. Two No. 8 turnouts will be installed in the vicinity of each grade crossing to allow connection to the new mainline track that will run on the opposite side of the Winooski River for approximately 1.3 miles. This mainline track would allow the current existing mainline track to become a new siding once the existing Winooski River bridges (Bridge No. 305 and 306) are reconstructed. Both the new mainline and existing mainline,

that will become a siding, will need to have their track replaced with 115-pound rail to accommodate passenger service. The new mainline track will only be constructed with 90-pound rail.

3.1.3 Design Speed

Although the track infrastructure upgrades are defined in this report, this study did not assess the cost associated with track geometry changes to increase speeds. The existing alignment geometry has been approximated from aerial imagery. Based on FRA 49 CFR Part 213 Appendix A, the maximum allowable speed given the limiting curve along the corridor can be determined prior to performing any formal track design. Assuming 1-inch of actual superelevation (Ea), a limiting curve of 13-degrees (450' radius at approx. MP 6.75) and cant deficiency (Eu) up to 3" for passenger service the vehicles would only be able to operate approximately 20 mph through this curve. Assuming a consistent 1-inch of actual superelevation (Ea) along the corridor, the passenger service vehicles would be able to operate at 25 mph through the rest of the curves.

Freight trains typically operate at a much lower cant deficiency (Eu). Freight service along the study corridor would be able to operate up to 15 mph assuming the same track geometry, but assuming an allowable Eu of 1.5".

A formal track design analysis has not been completed to determine the exact superelevation needed though the curves, however it can be assumed that freight will be able to retain operations at 10 mph based on the assumptions above. A full track design speed and infrastructure analysis shall be performed as part of future analysis. Additional speed restriction due to stations, grade crossings, or signal control have not been identified.

3.1.4 Clearance Envelope

A formal property survey and investigation was not been performed as part of this assessment, however there are multiple areas along the corridor where property rights and/or clearances to adjacent buildings will need to be identified. In particular, the section of track south of Main Street in Montpelier, VT consists of multiple buildings and parking areas that abut a narrow ROW envelope. Currently the property owners and patrons can access parking via the railroad ROW due to the extended limits of the asphalt crossing surface.

Existing Clearance North of Main Street (MP 1.36)

Existing Clearance South of Main Street (MP 1.36)

3.2 At-Grade Crossings

Almost all the at-grade crossings along the length of the study corridor will be replaced as part of this project except for a few new recently replaced crossings. The signal control for gates, flashers, etc. has been outlined in the signals and communications section below.

The track and roadway work associated with the at-grade crossing construction will include all or part of the following items:

- 20' swath of roadway excavation and reconstruction
- 115-pound CWR through crossings
- Rubber rail seal
- Concrete crossing panels (field and gauge side)
- Sidewalk repair or replacement with pedestrian ramps and tactile warning panels
- Signal control (flashers, gates, warning signs, etc.)

3.2.1 Grade Crossing Signals and Communication

Table 6 below identifies the at-grade crossings, the proposed signal infrastructure required at each crossing and proposed closures of private crossings.

Table 6 Proposed Grade Crossing Signal Control Inventory

Milepost	Street Name	Proposed Crossing Improvements			
		Flashers	Gates	Cantilevers	Preemption
0.00	Junction Road	2	2	2	NO
0.70	Green Mountain Drive	3	3	1	NO
0.89	Bailey Avenue	4	4	1	YES
1.00	Bike Path Crossing	2	2	0	NO
1.05	State Complex Pedestrian		Close Crossing at MP 1.05		
1.10	Bank Pedestrian		Close Crossing at MP 1.10		

1.17	Taylor Street	4	4	0	NO
1.27	Bike Path	2	2	0	NO
1.36	Main Street	4	4	1	NO
1.47	Pedestrian	2	2	0	NO
1.91	Granite Street (Montpelier)	3	3	0	NO
2.10	Gin Lane	New Construction – No Proposed Work			
2.49	Pioneer Street	3	3	0	YES
2.70	Lumber Yard	2	2	0	NO
3.08	Vacant Lot	New Construction – No Proposed Work			
3.23	Montpelier Road (Route 2)	2	2	1	NO
3.23b	Country Club Road	2	2	0	NO
4.14	Partridge Farm Road	2	2	1	NO
4.84	US-302	4	4	2	NO
5.56	Roland Trailer Park	2	2	0	NO
6.45	Jones Brother Company	2	2	0	NO
6.53	Jones Brothers Way	2	2	0	NO
6.77	Wiley Street	3	1	2	NO
6.80	Gulf Oil Company	2	2	0	NO
6.99	West Second Street	2	2	1	NO
7.06	Berlin Street	4	4	0	NO
7.11	Hill Martin Corp	2	2	0	NO
7.21	Blackwell Street	3	2	9	YES
7.42	Vermont Route 62	0	0	0	YES
7.64	Granite Street (Barre)	4	4	0	NO
7.72	Depot Square	2	2	0	NO
7.75	TD Bank Drive-Thru	Close Crossing at MP 7.75			

Each of the existing crossings to remain has been assessed at a conceptual level to determine the expected crossing protection required, (gates, flashers, traffic signal preemption, etc.). Through the assessment it was determined three crossings would need to be closed due to unsafe conditions relating to the proposed commuter service. In addition to the physical crossing equipment, the assumption for each of the crossings is that new train detection circuitry will need to be installed to control the crossing equipment.

This information is all based on best engineering practice assumptions and from past project experience. Each of the active at-grade crossings listed in the table above will need to be included in a formal DTR prior to determining the equipment required at each crossing. There is further information regarding the signals and communications assumptions along the corridor in Section 3.5 – Signals and Communications.

3.3 Bridges

3.3.1 Repair or Replacement Requirements

The necessity of repairs or replacement of bridges is based on the type and severity of the deterioration or deficiency determined from review of bridge inspection reports, load ratings, and the site visit. Deteriorations or deficiencies requiring repair or replacement are listed below.

- A significant reduction in load-carrying capacity of the structure (for example, section loss in a primary superstructure member)
- Bearings with limited functionality (for example, expansion bearings with excessive movement and lack of restraint)
- An advanced level of deterioration that is likely to continue (for example, significant steel section loss, or extensive concrete cracking or spalling)

When the repairs are extensive and become impractical it is necessary to replace portions of, or the entire structure. Some bridge superstructures are recommended for replacement where substantial superstructure repairs are required, and the substructures can be reused.

3.3.2 Elements Not Included

The following elements, even perhaps when found in poor condition are not recommended for repair because, generally, these elements either do not affect the load-carrying capacity, do not represent a significant deterioration likely to advance, or are considered a long-term maintenance item as listed below.

- Steel painting
- Lead paint removal
- Improvements to the channel below
- Preventative maintenance (sealants, coatings, cleaning etc.)
- Deterioration not likely to advance or affect the load-carrying capacity (for example, member distortion without load reduction, or minor section loss to secondary steel member)

3.3.3 Individual Bridge Repairs or Replacement

Based on the repair or replacement criteria discussed, each bridge has been considered for repair or replacement needs as listed below. Only the major structural repairs are listed, and minor or incidental items are not included.

- **NECR Bridge over the Dog River** – Based the limited condition assessment during the site visit, it is assumed that only minor rehabilitation is needed such as select stringer replacement and/or bearing rehabilitation.
- **WACR Br. 303 -** Rehabilitate the four expansion bearings at the pier, including resetting, re-aligning, and lubricating the nested roller bearings.

- **WACR Br. 304 -** No rehabilitation or replacement is anticipated as a VTrans Rail Project is currently under development with construction planned for 2020. The goal of the project is to achieve 263-kip live load at 10mph for a 20+ year design life. The live load will likely be adequate for GP40 locomotive at a minimum of 10mph.
- **WACR Br. 305 -** Replace Superstructure – the structure capacity is being limited by the condition of several floor beams with significant deterioration to the remaining floor beams and girders. In addition, bearing rehabilitation and replacement of numerous rivets would be required.
- **WACR Br. 306 -** Replace Superstructure – The structure capacity is being limited by the condition of the stringers. Additionally, there is heavy deterioration to the truss bottom chords and floor beams which could rapidly advance to a point where they also will limit the structure capacity. The expansion bearings would require rehabilitation as well.
- **WACR Br. 307 -** Rehabilitate the expansion bearings at Abutment 1, including resetting, re-aligning, and lubricating the nested roller bearings.
- **WACR Br. 309 -** No Rehabilitation or replacement is anticipated as the structure has adequate capacity and no significant deteriorations

3.4 Station Platform Locations

The project scope identified four locations where future platforms will be considered for the commuter rail service.

- Montpelier/Barre Amtrak Station (opposite existing Amtrak platform),
- Taylor Street Crossing adjacent to the Multi-Modal Center currently under construction,
- At the north end of the Central Plaza Shopping Center parking lot, which is accessible from Ames Drive, and
- The TD Bank Drive-Thru crossing

Each of the locations being considered for a station assumes the installation of a high-level platform only. For accessibility and emergency egress needs the stations would need to be designed based on guidance from the local agencies and Americans with Disabilities Act (ADA) regulations, this analysis has not been performed as part of this study. This includes ramp and/or stair access points and designation of emergency egress capacity and accommodations. In order to accommodate the proposed high-level platforms, the track alignment will be modified to introduce a minimum of a 300-foot tangent section if the station location is within a curve. This will provide accessible level boarding for all passengers at all the proposed station locations. Concept plans for station layouts were not developed as part of this assessment.

Each of the platform locations will require some level of site, structural, signal, track, and roadway work. All high-level platforms are assumed to be covered with canopies for the full length. Graphics of the platform and track layouts at the stations were not developed as part of this analysis. The costs for this station work (in addition to the high-level platform and canopy) and the track work through the stations are not included in this assessment. With the Winooski River running parallel to the track for much of the corridor, it is likely that

environmental permitting and clearance improvements will be required for this project. The fees associated with permitting and additional grading/embankment stabilization are not included in this assessment.

3.5 Signals and Communications

The options for signal control on the corridor are defined below. Currently the FRA has issued a federally mandated requirement (CFR Title 49 Subtitle B Chapter 2 Part 236) for all railroads operating passenger service to install PTC along their systems. Although this is a federally mandated requirement, there is language prior to this section in the regulations (CFR Title 49 Subtitle B Chapter 2 Part 235.8) that discusses "Relief from the requirements of part 236 of this title." This section defines the potential for a railroad to go through a waiver process with local officials that may exempt the railroad or agency from being required to install PTC at the start of service. At this point in the development of this project there is limited information and no design to base the signal assumptions on. For this reason, two alternative signal system configurations have been outlined below.

In addition to the signal control identified below, an Automatic Highway Warning System (AHWS) will need to be installed at each of the at-grade crossings as defined in section 3.2.1 Grade Crossings Signal Control.

3.5.1 Dark Territory – No Signals

As mentioned above, the FRA has a waiver process that allows agencies and railroads to apply for exemptions from the PTC requirement. There are several operational assumptions, including temporal separation, that could help determine if the proposed service can receive relief from the PTC requirements. Temporal separation means that passenger and freight service, although using the same tracks, do not operate at the same times. The current operation for the freight railroad is a single round-trip from Montpelier Junction to the quarry, the assumption for the passenger service would be to offer continued service throughout the day. As an example, if the passenger service was to operate during the morning and evening commute and the freight service operated solely at night when the passenger service was not operating. Or made its trip to the quarry before the morning passenger service was operating and then back after the passenger service stopped operating for the evening commute, the argument for temporal separation could be made.

In this case, the corridor signal control could be defined as Dark Territory. There would be no overriding signal control for the length of the corridor. Only the AHWS at the grade crossings would need to be installed.

3.5.2 Cab Signals and Positive Train Control (ATC/PTC)

On the opposite end of the spectrum, the full signal control for the corridor would require installation of cab signal control and positive train control (ATC/PTC) along the length of the corridor. As mentioned above, without any formal operating plan or a signal design it is difficult to determine the full scope of work needed for the installation of this signal system.

3.6 Drainage

A detailed visual inspection of each cross culvert was not performed as part of this assessment. Each of the 20 culverts along the corridor will be replaced. The new culvert design will accommodate railroad live loading and depth requirements. In areas where the cross section is level new underdrains or ditches will be proposed. Existing ditches will be cleaned out and preventative measures taken to eliminate any roadway drainage from flowing onto the track ROW. Clogged ditches and culverts seem to be the primary driver for all the drainage issues along the corridor.

3.7 Utilities

Based on the visual inspection of the track corridor, various locations with utility poles or other above ground utilities have been identified. For the purposes of this evaluation we are assuming that all private and municipal-owned utilities along the ROW will be relocated as part of this project. Not all utilities will need to be relocated but it is anticipated that there are potential conflicts with existing structures that have not been identified in this assessment.

Existing utilities (sewer, water, etc.) located at the grade crossings were not identified as part of this analysis. Existing utilities within the roadway will be maintained in-place by their respective utility company.

4

Conceptual Cost Estimate and Schedule

The construction cost estimate to upgrade the state-owned railroad line between Montpelier, VT and Barre, VT to meet passenger rail standards is $67 million (in 2019 dollars with no PTC signal control). A detailed breakdown of the cost and assumptions are summarized in the following sections. The design and construction schedule based on the assumptions listed in this chapter is approximately two years for design/ permitting and four years for construction.

4.1 Cost Estimate Assumptions

The cost estimate was developed using AREMA recommended practice, experience on similar projects, common construction methods and engineering judgement. The cost estimate has been developed in accordance with the following guidelines and assumptions:

- All unit costs are expressed in 2019 dollars,
- Escalation has **not** been applied to the cost estimate (average 4.5% per annum),
- Quantities were estimated for the major items along the corridor. Minor items are intended to be covered by the contingency costs,

- Construction will be staged to maintain existing freight service (currently operating one round-trip daily),
- The cost of major upgrades of existing private utilities will be borne by the utility owner,
- The bridge estimates are based on visual inspection of the bridges only. All bridge inspection reports and load ratings were completed by others,
- A 50% design contingency is applied to the total construction cost. This is an industry standard percentage for initial/conceptual level studies. The contingency is intended to cover the minor items not quantified, as noted above, and to account for the unknowns based on the level of design performed. The percent contingency is intended to decrease as the project is further developed (i.e. 30% for preliminary engineering, 20% for final design),
- Risk assessment has **not** been performed at this time,
- Soft costs are not included as part of this assessment. Soft costs include engineering, project management, construction administration/management, non-construction related insurance (i.e. professional liability), legal, permits, agency review fees, surveys, testing, and startup.

The following is a list of the Track and Signal assumptions for the cost estimate:

- Full depth reconstruction of the single-track main line is recommended for the length of the corridor; all track materials to be removed and replaced,
- No signal design has been performed. Order of Magnitude cost for corridor signals and grade crossing signals based on previous projects and experience on other projects only,
- Earthwork quantity assumes 27" depth of material removal to accommodate full depth track construction,
- Clearing & grubbing is assumed only in areas of heavy vegetation and is intended to provide approximately 10' clear on both sides of the track,
- Right-of-way fencing has only been included where there are potential conflicts with pedestrians or bicyclists, or opposite station platforms to prevent the public from crossing the tracks mid-platform,
- Bridge track construction costs consist of the bridge rail, guard rail, and OTM and the bridge timbers (including all attachment materials),
- Assume 16" bridge timber tie spacing;
- A future proposed siding track from approximately Milepost 2.0 to Milepost 3.2 will be constructed by others using relay rail. This project includes cost to upgrade the proposed siding track rail to 115-pound RE rail only.

The following items have not been included in the cost estimate for passenger rail construction:

- Additional passing sidings for future operations expansion,
- Environmental permitting,
- ROW acquisitions or easements (temporary or permanent),

- Future train operations (increased speeds and associated trackwork),
- Station facilities and associated impacts (station buildings, electric lifts, parking, track realigning),
- Specific staging and laydown areas required for construction,
- Roadway grade crossing utility reconstruction,
- Force account costs for railroad services, flagging, police details, agency costs, etc.

Other major assumptions have been provided in Chapter 3 – Proposed Design Considerations.

4.2 Cost Estimate Summary

Table 7 below breaks down the estimate in to major categories for construction. These costs may vary depending on the premiums associated with the construction schedule assumptions, however it is an accurate representation of the order of magnitude cost for the project.

Table 7 Cost Estimate Summary

Item Description	Quantity		Cost
Trackwork			**$23,071,200**
Track Demolition	43,000	TF	$2,150,000
Earthwork	71,200	CY	$1,780,000
Clearing & Grubbing	1.0	AC	$30,000
Single Track Construction	40,300	TF	$14,105,000
Siding Track (Rail and OTM Only)	7,800	LF	$959,400
Corridor Fencing (6' CLF)	27,400	LF	$2,246,800
At-Grade Crossings			**$11,710,000**
Roadway Work	5,500	SY	$605,000
Single Track Construction	1,300	TF	$455,000
Concrete Crossing Panels	1,400	LF	$660,000
Rubber Rail Seal	2,900	LF	$290,000
Signals & Communications	1	LS	$9,700,000
Bridges			**$3,689,000**
Bridge Rail and OTM (Track)	2,000	LF	$100,000
Bridge Timbers (Track)	800	EA	$584,000
Bridge Repairs	2	EA	$105,000
Bridge Replacement	2	EA	$2,900,000
Station Platforms			**$4,400,000**
High-Level Platform	800	LF	$2,000,000
Platform Canopy	800	LF	$2,400,000

Drainage			**$1,732,500**
Underdrains	15,100	LF	$1,132,500
Culverts	20	EA	$600,000
Signals & Communications			**$19,600,000**
ATC/PTC Signal System	1	LS	$16,000,000
Granite Street Interlocking	1	LS	$1,800,000
Montpelier Road Interlocking	1	LS	$1,800,000
Subtotal Construction Cost (without PTC)			**$44,602,700**
Construction Contingency (50% without PTC)			$22,301,350
Total Construction Cost (without PTC)			**$66,904,050**
Subtotal Construction Cost (with PTC)			**$64,202,700**
Construction Contingency (50% with PTC)			$32,101,350
Total Construction Cost (with PTC)			**$96,304,050**

4.3 Design Schedule Assumptions

The following is a list of assumptions developed with relation to the assumed design schedule:

- The design schedule occurs independent of the construction activities. It is assumed that the standard Design-Bid-Build procurement format would be followed;
- All Environmental permitting is to be completed by the end of the design phase. Depending on the extent of the permitting needed, the process can likely begin early in the design phase, however may require a completed design before permits can be issued;
- Any property acquisitions, temporary or permanent, will be identified early in the design process so the agency can begin the real estate procurement process;
- All stakeholders (VTrans, VRS, NECR, WACR, City of Montpelier, City of Barre, etc.) will perform design plan and specification reviews for each of the major design submissions (25%, 75%, 100%, Plans, Specifications, & Estimate (PS&E)).

The design phase, inclusive of all permitting and real estate acquisitions, is expected to take up to **three years**.

4.4 Construction Schedule Assumptions

The following is a list of assumptions developed with relation to the assumed construction schedule:

- No formal construction staging plans have been developed as part of this analysis;
- All assumptions for construction staging assume a conservative approach to the schedule and work windows;
- Assume freight track operations must be maintained throughout the five-day work week (no freight activity on Saturday or Sunday);

- The official "Construction Season" occurs from April 15th to December 1st, but it is anticipated that all major construction activities will occur from May 1st to October 15th. The latter dates were used as the anticipated "Construction Season";
- Regular coordination with the railroad will be required in order to maintain railroad operations as well as efficient scheduling of construction activities;
- The railroad currently operates one train in the morning and one train in the evening. Assuming the railroad is amenable to varying operations, the contractor would likely be able to have a 10-hour work window in the middle of every day by working with the railroad to move the morning train as early as possible and the evening train as late as possible;
- Assume track construction would be best completed in small segments throughout the middle of the work day. After mobilizing crews and equipment the contractor would have approximately eight hours of work window to demolish existing track, excavate the fouled ballast, place and compact subgrade materials and bottom ballast, install the new track section, flood with new ballast, and surface, line, and tamp the newly installed track.
- Assume production of approximately eight 39' prefabricated track panels a day. This does not include installation of underdrains, culverts, grade crossings, or signals;
- Assume weekend work (two full days) for installation of grade crossing materials (track section, concrete panels, and conduit for signal control), turnouts, culverts, and bridge timber tie and track replacement;
- Signal equipment at crossings, including gates, flashers, and connection of cables can be installed independently and will not impact freight operations during construction;
- Underdrains can be installed independently and will not impact freight operations during construction;
- The track construction schedule, excluding all the weekend work activities will take approximately **135 days** to complete;
- It is assumed the weekend work activities will be completed in approximately **31 weekends**, culvert installation, grade crossing replacement, and final welding, destressing, and surface and aligning can happen simultaneously;
- This project assumes all rail will be CWR for the final condition. Assume the initial track construction is jointed rail. After all track materials have been replaced, a rail mounted welding machine can be used to flash butt weld each of the joint locations. For the 8-mile corridor it is assumed there will be approximately 2,200 joints to weld. At a production of eight welds a day, this process will take approximately **220 days**.
- The final closeout items for the track will be destressing the CWR and performing a final surface, aligning, and tamping of the entire 8-mile corridor;
- A future siding track is proposed between approximately Milepost 2.0 and Milepost 3.2. It is assumed the siding track will be constructed using relay rail. This project assumes the siding track is constructed and in service. Cost to upgrade rail on the proposed siding to new 115-pound RE is included in the cost estimate.

- Reconstruction of WACR Br. 305 and 306 will require that section of track be taken out of service. Given this also coincides with the location of a proposed siding track by others, freight operations can be shifted to the siding track during reconstruction of these bridges. This assumes the siding track construction project is completed and has provided a connection between the WACR and the new siding and that the bridge reconstruction happens concurrently with the track construction activities;
- Rehabilitation of WACR Br. 303 and 307 can be completed independently of the track construction and will not impact freight operations during construction.

Based on the assumptions listed above, the construction of track, grade crossings, culverts, and crossing signal equipment will be completed within **two construction seasons**. The construction schedule for final close-out items, including welding of joints, destressing, and surface, aligning, and tamping is assumed to take approximately **one construction season**.

There is room for efficiencies with the number of crews and work windows through coordination between a contractor and the railroad, however this analysis has assumed a high-level conservative approach to the schedule. Overall the construction schedule encompassing all necessary activities is expected to take between **four and five years**.

5

Future Considerations

This report provides a high-level order of magnitude assessment of the track and signal infrastructure required to support passenger rail service from Montpelier, VT to Barre, VT This chapter identifies other considerations that should also be evaluated.

5.1 Railroad Operations

The existing freight operator along the WACR B&M line has identified future expansion as a long-term goal. The freight line operator anticipates that the quarry production could increase in coming years resulting in 60 car trains. Rail sidings should be strategically located along this 8-mile corridor so the freight and passenger rail services can operate independently with limited potential for service disruptions. There are multiple locations along the corridor that can be considered for passenger sidings to avoid potential conflicts with freight operations.

5.2 Station Infrastructure Considerations

Potential station platform and track modifications locations were noted during the site walk, however the track work or station site work associated with the platform construction are

not captured in this analysis. A more detailed track alignment study must be performed to accurately identify the track related work required to accommodate the future platforms.

Future considerations for station designs include, but are not limited to the following:

- Parking lot sizing
- Station facilities (bathrooms, ticket vending, bike racks, benches, etc.)
- Platform emergency egress

5.3 Environmental Permitting

VHB assumes that the proposed rail upgrades and construction of rail platforms would require the approval of the FRA and the Federal Transit Administration (FTA) which by extension requires that the FRA and FTA ensure that the project is compliant with the National Environmental Policy Act of 1969 (NEPA). It is anticipated that the FRA would be the lead agency for NEPA and the FTA would be the cooperating Agency. Most of the proposed activities would constitute upgrades to an existing rail alignment with minimal sidings proposed and taking place within the existing railroad ROW. Though the construction of the platforms may require the acquisition of new ROW, these acquisitions would be immediately adjacent to the railroad ROW. Furthermore, because they would occur in previously developed locations, they would most likely be compatible with current land uses. As such, both the track upgrades and the new platforms would likely be considered eligible for a Categorical Exclusion (CE) per §771.116 (c) (21) and (22), provided that the noted conditions are met (emphasis added):

> *(21) Assembly or construction of facilities or stations that are consistent with existing land use and zoning requirements, do not result in a major change in traffic density on existing rail or highway facilities, and result in approximately less than ten acres of surface disturbance, such as storage and maintenance facilities, freight or* ***passenger loading and unloading facilities or stations****, parking facilities,* ***passenger platforms****, canopies, shelters, pedestrian overpasses or underpasses, paving, or landscaping.*
>
> *(22)* ***Track and track structure maintenance and improvements*** *when carried out predominantly within the existing right-of-way that do not cause a substantial increase in rail traffic beyond existing or historic levels, such as stabilizing embankments, installing or reinstalling track, re-grading, replacing rail, ties, slabs and ballast, installing, maintaining, or restoring drainage ditches, cleaning ballast, constructing minor curve realignments, improving or replacing interlockings, and the installation or maintenance of ancillary equipment.*

With respect to environmental permitting, the project would require U.S. Army Corp of Engineer's and Vermont Title 19 Consultation for any work performed in the channels for the bridge replacements and rehabilitations. Additional permitting requirements would include the Construction Stormwater Permit and potentially the Operational Stormwater Permit. The three high-level platforms would be subject to local permits and planning and zoning review but only to the extent allowed per 24 V.S.A. §4413. Given that all the proposed improvements would be carried out primarily within an existing rail corridor and/or

previously disturbed locations, it is unlikely that state or federally regulated resources beyond the temporary impacts to the waterways to complete the bridge work, would be impacted by the project or that it would be considered controversial. Public and municipal engagement for the site selection for and design of the platforms would be encouraged as part of the NEPA compliance process.

Appendix A – Track Inspection Photo Log

Montpelier/Barre Amtrak Station (MP 0.00) (Facing South)

Existing Track Condition at Amtrak Station (Facing South)

End of Track at Amtrak Station (Facing North)

No. 8 Turnout at Amtrak Station (Facing South)

No. 8 Turnout at DPM Facility (Facing North)

Existing Track Condition along Access Road

No. 8 Turnout on Wye Track (Facing North)

Manual Switch at No. 8 Turnout

Private Crossing (Not In Inventory)

NECR Bridge at Junction Road No Spray Zone (Facing South)

Existing Track Condition at Junction Road (Facing South)

At-Grade Crossing Track with Rubber Rail Seal (Junction Road)

Existing Track Condition after Junction Road under Rt-89 (Facing South)

Existing Track Condition after Junction Road (Facing South)

Existing Track Curve (Facing South)

Existing Track Condition (Facing South)

Existing Joint Bar

Existing Track Condition before Green Mountain Drive Crossing (Facing South)

Existing Track Condition at State Complex Pedestrian Crossing (Facing South)

Existing Track Condition at Shaw's near Main Street (Facing North)

Existing No. 8 Turnout after Granite Street (Facing South)

Existing Track Condition at Gin Lane Crossing (Facing North)

Existing Insulated Joint for Gin Lane Flashers

Existing Track Condition before Pioneer Street (Facing North)

Existing Track Condition before Pioneer Street (Facing South)

Existing Track Condition after Pioneer Street (Facing South)

Existing Track Condition – Timber Ties, Spikes, and Single-Shoulder Tie Plate

Existing Track Condition after Lumber Yard Crossing – No Spray Zone (Facing South)

Existing Track Condition (Facing North)

Existing Track Condition – No Spray Zone (Facing North)

Existing No. 8 Turnout before Vacant Lot Crossing (Facing North)

Existing No. 8 Turnout after Vacant Lot Crossing (Facing South)

Existing Manual Switch at No. 8 Turnout

Existing No. 8 Turnout after Vacant Lot Crossing (Facing North)

Existing Track Condition after Montpelier Road (Facing North)

Existing Track Condition (Facing North)

Existing Track Condition before Partridge Farm Road (Facing North)

Existing Track Condition after Partridge Farm Road (Facing North)

Existing Snow Mobile Crossing at Central Plaza Shopping Center

Existing Track Condition – Ballast and Rail

Existing Track Condition (Facing North)

Existing Track Condition (Facing South)

Existing Track Condition – No Spray Zone (Facing South)

Existing Track Condition at Private Crossing (Facing South)

Existing Track Condition behind Lumber Yard (Facing South)

Existing No. 8 Turnout at Berlin Street (Facing South)

Existing Track Condition before VT-62 Crossing (Facing South)

Existing No. 8 Turnout for Freight Siding after VT-62 Crossing (Facing South)

Existing No. 8 Turnout for Freight Siding and Engine House Access (Facing South)

Existing No. 8 Turnout for Engine House Access at Granite Street (Facing South)

Existing Track Condition after TD Bank Drive-Thru Crossing (Facing South)

Appendix B – Grade Crossing Inspection Photo Log

Junction Road Crossing (MP 0.00)
(Facing South)

Junction Road Crossing Surface (MP 0.00)
(Facing South)

Green Mountain Drive Crossing (MP 0.70)
(Facing North)

Green Mountain Drive Crossing Surface (MP 0.70)
(Facing South)

Bailey Avenue Crossing (MP 0.89)
(Facing South)

Bailey Avenue Crossing (MP 0.89)
(Facing North)

Bike Path Crossing (MP 1.00)
(Facing South)

Bike Path Crossing Surface (MP 1.00)
(Facing South)

State Complex Pedestrian Crossing (MP 1.05)
(Facing South)

State Complex Pedestrian Crossing (MP 1.05)
(Facing North)

Bank Pedestrian Crossing (MP 1.10)
(Facing South)

Bank Pedestrian Crossing Surface (MP 1.10)
(Facing South)

Taylor Street Crossing (MP 1.17)
(Facing South)

Taylor Street (MP 1.17)
(Facing South)

Bike Path Crossing Surface (MP 1.27)
(Facing South)

Bike Path Crossing (MP 1.27)

Main Street (MP 1.36)
(Facing South)

Main Street (MP 1.36)
(Facing South)

Pedestrian Crossing (MP 1.47) (Facing South)

Granite Street Crossing (MP 1.91) (Facing South)

Granite Street Crossing (MP 1.91) (Facing South)

Gin Lane Crossing Roadway Approach (MP 2.10)

Gin Lane Crossing (MP 2.10) (Facing North)

Pioneer Street Crossing (MP 2.49)
(Facing South)

Pioneer Street Crossing Surface (MP 2.49)
(Facing North)

Lumber Yard Crossing (MP 2.70)
(Facing North)

Vacant Lot Crossing (MP 3.08)
(Facing South)

Vacant Lot Crossing (MP 3.08)
(Facing North)

Montpelier Road Crossing (MP 3.23)
(Facing South)

Montpelier Road Crossing (MP 3.23)
(Facing North)

Partridge Farm Road Crossing (MP 4.14)

Partridge Farm Road Crossing (MP 4.14)
(Facing North)

US-302 Crossing (MP 4.84)
(Facing South)

US-302 Crossing (MP 4.84)
(Facing South)

River Run Manor Crossing (MP 5.55)
(Facing South)

River Run Manor Crossing Surface (MP 5.55)

Jones Brother Company Crossing (MP 6.45)
(Facing North)

Jones Brother Way (MP 6.53)
(Facing South)

Wiley Street Crossing (MP 6.77)
(Facing South)

Gulf Oil Company (MP 6.80)
(Facing South)

West Second Street Crossing (MP 6.99)
(Facing South)

West Second Street Crossing (MP 6.99)
(Facing North)

Berlin Street Crossing (MP 7.06)
(Facing South)

Berlin Street Crossing Surface (MP 7.05)
(Facing North)

Hill Martin Corp Crossing (MP 7.11)
(Facing South)

Blackwell Street Crossing (MP 7.21)
(Facing South)

VT-62 Crossing (MP 7.42)
(Facing South)

VT-62 Crossing (MP 7.42)
(Facing South)

Granite Street Crossing (MP 7.64)
(Facing South)

Depot Square Crossing (MP 7.72)
(Facing South)

TD Bank Drive-Thru Crossing (MP 7.75)
(Facing South)

Appendix C – Grade Crossing Inventory Reports

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-319V	Fair	MONTPELIER JUNCTION RD	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	0

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			Rail Seal
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	30-59	13	93	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Stop or Yield		None	No
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	No	Worn
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	105

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Local	Class 2 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-320P	Fair	GREEN MOUNTAIN DR	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	0.7

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			Mud-Rail
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	57	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Stop or Yield		None	No
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	No	No	Not Applicable
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE		TRAFFIC LANE COUNT	
Two-way Traffic		3	
TRAFFIC SIGNAL NEARBY	**INTERSECTION NEARBY (LESS 500 FT)**		**DISTANCE TO INTERSECTION**
No	Yes		55
FUNCTIONAL CLASSIFICATION		**AOT CLASSIFICATION**	
Local		Class 3 Town Highway	

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-321W	Fair	BAILEY AVE	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	0.89

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	100	No

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	No	OK
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	3

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
Yes	Yes	45

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Minor Arterial	Class 1 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
969-326V	Good	Bike Path	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	1

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			Rail Seal
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	30-59	13	27	No

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	No	No	Not Applicable
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
N/A	0

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	No	N/A

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Unknown	Unknown

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
969-328J	Poor	State Complex Ped	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	1.05

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Timber	Timber			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	15	No

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
No signs or signals		None	No
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
No	No	No	Not Applicable
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
N/A	0

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	No	N/A

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Unknown	Unknown

General Comments

None

Crossing Details

Inspection Date: 6/19/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
NOT-0008	Excellent	Bank Ped Xing	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	1.1

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	7	No

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
No signs or signals		None	No
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	No	No	Not Applicable
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)	MAST BULBS
0	No Flashers

BACK OR SIDE FLASHERS	TOTAL FLASHER PAIR COUNT	FLASHER BULB SIZE	BELL COUNT
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
N/A	0

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	No	N/A

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Unknown	Unknown

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-322D	Excellent	TAYLOR ST	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	1.17

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Concrete	Concrete			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	45	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	No
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	No	Worn
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	240

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Minor Arterial	Class 2 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
NOT-0010	Poor	Pedestrian	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	1.27

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	12	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
No signs or signals		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Both	No	No	Not Applicable
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)	MAST BULBS
0	No Flashers

BACK OR SIDE FLASHERS	TOTAL FLASHER PAIR COUNT	FLASHER BULB SIZE	BELL COUNT
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
N/A	0

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	No	N/A

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Unknown	Unknown

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-323K	Fair	MAIN ST	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	1.36

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	75	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	Yes	OK
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE		TRAFFIC LANE COUNT
Two-way Traffic		4
TRAFFIC SIGNAL NEARBY	**INTERSECTION NEARBY (LESS 500 FT)**	**DISTANCE TO INTERSECTION**
No	Yes	52
FUNCTIONAL CLASSIFICATION		**AOT CLASSIFICATION**
Minor Arterial		Class 1 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
969-327C	Fair	Ped/Bike Xing	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	1.47

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	15	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Stop or Yield		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	No	Yes	Worn
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
N/A	0

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	No	N/A

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Unknown	Unknown

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-326F	Fair	GRANITE ST	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	1.91

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	40	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	No
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	No	No	Not Applicable
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE		TRAFFIC LANE COUNT	
Two-way Traffic		2	
TRAFFIC SIGNAL NEARBY	**INTERSECTION NEARBY (LESS 500 FT)**		**DISTANCE TO INTERSECTION**
No	Yes		110
FUNCTIONAL CLASSIFICATION		**AOT CLASSIFICATION**	
Major Collector		Class 3 Town Highway	

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-327M	Fair	PIONEER ST	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	2.49

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			Rail Seal
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	35	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	No
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	No	No	Not Applicable
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
Yes	Yes	162

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Major Collector	Class 2 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-329B	Good	Vac Lot(Grossmans	Montpelier

RAIL DIVISION	SUBDIVISION	MP
Washington County Railroad Montpelier & Barre	Montpelier & Barre	3.08

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			Rail Seal
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	36	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
1 to 3 Gates		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	No	Worn
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
2		0	2 Quad
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
2		Incandescent	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
Back Lights Included	4	12	1

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	40

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Unknown	Unknown

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-330V	Fair	E MONTPELIER RD	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	3.23

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	30-59	13	130	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Flashing Lights		All Approaches	No
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	No	No	Not Applicable
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
2		Incandescent	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
Back Lights Included	4	12	1

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	375

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Principal Arterial	Class 1 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-331C	Fair	COUNTRY CLUB RD	Montpelier
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	3.23

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
2	60-90	26	33	No

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	No
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	No	No	Not Applicable
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE		TRAFFIC LANE COUNT	
Two-way Traffic		2	
TRAFFIC SIGNAL NEARBY	**INTERSECTION NEARBY (LESS 500 FT)**		**DISTANCE TO INTERSECTION**
No	Yes		95
FUNCTIONAL CLASSIFICATION		**AOT CLASSIFICATION**	
Local		Class 3 Town Highway	

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-333R	Good	PARTRIDGE FARM RD	Berlin

RAIL DIVISION	SUBDIVISION	MP
Washington County Railroad Montpelier & Barre	Montpelier & Barre	4.14

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	22	No

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	No	No	Not Applicable
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	280

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Local	Class 3 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/20/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-334X	Good	US-302	Berlin
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	4.84

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Concrete	Concrete			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	0-29	13	162	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Flashing Lights		None	No
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	Yes	OK
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
4		Incandescent	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
Both Included	10	12	2

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
Yes	Yes	450

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Principal Arterial	US Highway

General Comments

None

Crossing Details

Inspection Date: 6/19/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-339G	Good	WILLEY ST	Barre City

RAIL DIVISION	SUBDIVISION	MP
Washington County Railroad Montpelier & Barre	Montpelier & Barre	6.77

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Other (Specify)	Other (Specify)			Rail Seal
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	63	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Stop or Yield		None	No
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	Yes	Worn
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	29

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Local	Class 3 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/19/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-341H	Fair	W SECOND ST	Barre City
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	6.99

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			Rail Seal
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
2	60-90	40	35	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	Yes	Worn
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	220

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Local	Class 3 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/19/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-342P	Poor	BERLIN ST	Barre City
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	7.06

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			Rail Seal
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	45	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	Yes	Worn
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	160

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Minor Arterial	Class 2 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/19/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-344D	Fair	BLACKWELL ST	Barre City
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	7.21

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	50	No

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	Yes	Worn
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	85

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Major Collector	Class 3 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/19/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-345K	Good	VT-62	Barre City

RAIL DIVISION	SUBDIVISION	MP
Washington County Railroad Montpelier & Barre	Montpelier & Barre	7.42

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Concrete	Concrete			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	85	Yes

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
1 to 3 Gates		Median	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	Yes	OK
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
2		0	2 Quad
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
2		0	Incandescent

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
2		Incandescent	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
Back Lights Included	12	12	2

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	4

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
Yes	Yes	270

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Principal Arterial	State Highway

General Comments

None

Crossing Details

Inspection Date: 6/19/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-348F	Fair	GRANITE ST	Barre City
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	7.64

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
2	60-90	30	48	No

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	Yes	Worn
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	60

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Local	Class 3 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/19/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
837-349M	Fair	DEPOT SQ	Barre City

RAIL DIVISION	SUBDIVISION	MP
Washington County Railroad Montpelier & Barre	Montpelier & Barre	7.72

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			None
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	25	No

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Crossbucks		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	Yes	Yes	OK
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)	MAST BULBS
0	No Flashers

BACK OR SIDE FLASHERS	TOTAL FLASHER PAIR COUNT	FLASHER BULB SIZE	BELL COUNT
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
Two-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	190

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Local	Class 3 Town Highway

General Comments

None

Crossing Details

Inspection Date: 6/19/18

CROSSING NUMBER	SURFACE CONDITION	ROAD NAME	TOWN
NOT-0005	Good	TD Bank Driveway	Barre City
RAIL DIVISION		**SUBDIVISION**	**MP**
Washington County Railroad Montpelier & Barre		Montpelier & Barre	7.75

Crossing Details

MAIN SURFACE MATERIAL	SECONDARY SURFACE MATERIAL			FLANGE MATERIAL
Asphalt	Asphalt			Mud-Rail
NUMBER OF TRACKS	**ANGLE**	**WIDTH**	**LENGTH**	**SNOOPER COMPLIANT**
1	60-90	13	25	No

Safety Information

WARNING DEVICE		CHANNELIZATION	ILLUMINATED
Other signs or signals		None	Yes
PAVED	**STOP LINE**	**RR PAVEMENT MARKINGS**	**PAVEMENT MARKINGS CONDITION**
Yes	No	No	Not Applicable
GATE ARMS (VEHICLE)		**GATE ARMS (PEDESTRIAN)**	**GATE CONFIGURATION**
0		0	None
CATILEVERED MASTS OVER ROAD		**CANTILEVERED MAST BESIDE ROAD**	**CANTILEVERED BULBS**
0		0	No Flashers

MAST COUNT (NOT CANTILEVERED)		MAST BULBS	
0		No Flashers	
BACK OR SIDE FLASHERS	**TOTAL FLASHER PAIR COUNT**	**FLASHER BULB SIZE**	**BELL COUNT**
None	0	No Flashers	0

Vehicular Traffic Information

TRAFFIC LANE TYPE	TRAFFIC LANE COUNT
One-way Traffic	2

TRAFFIC SIGNAL NEARBY	INTERSECTION NEARBY (LESS 500 FT)	DISTANCE TO INTERSECTION
No	Yes	190

FUNCTIONAL CLASSIFICATION	AOT CLASSIFICATION
Unknown	Unknown

General Comments

None